AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Claim 1 (currently amended): A tape drive system, comprising:

a head assembly, comprising:

a head element for reading or writing data to a magnetic tape medium; and

a pressure sensor coupled to the head element, the pressure sensor configured to generate a pressure signal representative of a pressure applied by the head element onto the pressure sensor wherein the pressure sensor comprises a plurality of pressure sensing elements positioned to sense a pressure gradient across the head assembly in a lateral direction perpendicular to a direction of tape travel.

Claim 2 (original): The tape drive system of claim 1, further comprising:

a head support, wherein the pressure sensor is coupled to the head support.

Claim 3 (original): The tape drive system of claim 1, wherein the head assembly further comprises:

an accelerometer for sensing an acceleration of the head assembly and for generating a acceleration signal representative of an acceleration experienced by the head assembly.

Claim 4 (currently amended): The tape drive system of claim [[1]] 23, wherein the pressure sensor comprises a plurality of pressure sensing elements.

Claim 5 (original): The tape drive system of claim 4, wherein the plurality of pressure sensing elements are positioned to sense a pressure gradient across the head assembly in a lateral direction perpendicular to a direction of tape travel.

Claim 6 (original): The tape drive system of claim 1, further comprising:

a take-up reel motor;

a supply reel motor;

a motor controller coupled to the take-up reel motor, the supply reel motor, and the pressure sensor, the motor controller being configured to control the rotation of the take-up reel motor and the supply reel motor in response to changes in the pressure signal to maintain a desired tension in a tape medium passing between a take-up reel coupled to the take-up reel motor and a supply reel coupled to the supply reel motor.

Claim 7 (original): The tape drive system of claim 6, further comprising:

an accelerometer for sensing an acceleration of the head assembly and for generating a acceleration signal representative of an acceleration experienced by the head assembly; and

a tension control module coupled to the pressure sensor and the accelerometer for receiving the pressure signal and the acceleration signal and generating a tension signal representative of a tension in the tape medium;

wherein the motor controller is coupled to the pressure sensor through the tension control module such that the motor controller controls the rotation of the take-up reel motor and the supply reel motor based upon the tension signal generated by the tension control module.

Claim 8 (original): The tape drive system of claim 2, wherein:

the head support further comprises a guide member receiving portion; and

the head element further comprises:

a front side for contacting the magnetic tape medium;

a back side opposite the front side; and

a guide member protruding from the back side of the head element and having a distal end movably positioned in the guide member receiving portion of the head support, such that the head element is movable along an axis defined by the guide member.

Claim 9 (original): The tape drive system of claim 8, wherein:

the head element further comprises a rotation inhibiting member which engages the head support to prevent the head element from rotating about the axis defined by the guide member while enabling the head element to move along the axis defined by the guide member.

Claim 10 (original): The tape drive system of claim 8, wherein:

the pressure sensor is disposed between the head support and the back side of head element.

Claim 11 (original): The tape drive system of claim 10, wherein:

the pressure sensor comprises a first pressure sensing element and a second pressure sensing element, the guide member being positioned between the first and second pressure sensing elements.

Claim 12 (currently amended): A method of operating a tape drive system, comprising:

passing a tape medium between a take-up reel and a supply reel such that a tension in the tape medium causes the tape medium to apply a pressure onto a head element; [[and]]

using a pressure sensor to detect a pressure applied by the head element onto the pressure sensor; and

using an accelerometer to detect an acceleration of a head support, the head element being supported by the head support,

wherein the determining whether the pressure detected by the pressure sensor corresponds with the desired tape medium tension comprises calculating a tension in the tape medium based upon the pressure detected by the pressure sensor and acceleration of the head support detected by the accelerometer.

Claim 13 (original): The method of claim 12, further comprising:

determining whether the pressure detected by the pressure sensor corresponds to a desired tape medium tension; and

if the pressure detected by the pressure sensor corresponds with an undesired tape medium tension, adjusting the tension of the tape medium.

Claim 14 (original): The method of claim 13, wherein the adjusting the tension of the tape medium comprises adjusting a rotational velocity of a take-up reel motor driving the take-up reel or a supply reel motor driving the supply reel.

Claim 15 (cancelled)

Claim 16 (currently amended): A tape drive system, comprising:

a take-up reel motor;

a supply reel motor;

a tape path for a magnetic tape medium; and

a pressure sensing assembly provided adjacent the tape path, the pressure sensing assembly comprising:

a support;

a tape contacting member; and

a pressure sensor coupled to the tape contacting member, the pressure sensor configured to generate a pressure signal in response to a compression of the pressure sensor, the signal being representative of a pressure applied by the magnetic tape medium onto the pressure sensing assembly, wherein the pressure sensor comprises one or more pressure sensing elements, each pressure sensing element comprising a transducer for producing the signal representative of the pressure applied by the magnetic tape medium onto the pressure sensing assembly.

Claim 17 (original): The tape drive system of claim 16, wherein the pressure sensor is further coupled to the support.

Claim 18 (cancelled)

Claim 19 (original): The tape drive system of claim 16, further comprising:

a motor controller coupled to the take-up reel motor, the supply reel motor, and the pressure sensing assembly, the motor controller being configured to control the rotation of the take-up reel motor and the supply reel motor in response to changes in the pressure signal to maintain a desired tension in a tape medium passing between a take-up reel coupled to the take-up reel motor and a supply reel coupled to the supply reel motor.

Claim 20 (original): The tape drive system of claim 16, wherein:

the pressure sensing assembly comprises a head assembly;

the tape contacting member comprises a head element; and

the support comprises a head support.

Claims 21-22 (cancelled)

Claim 23 (new): A tape drive system, comprising:

a head assembly, comprising:

a head element for reading or writing data to a magnetic tape medium;

a pressure sensor coupled to the head element, the pressure sensor configured to generate a pressure signal representative of a pressure applied by the head element onto the pressure sensor;

a take-up reel motor;

a supply reel motor; and

a motor controller coupled to the take-up reel motor, the supply reel motor, and the pressure sensor, the motor controller being configured to control the rotation of the take-up reel motor and the supply reel motor in response to changes in the pressure signal to maintain a desired tension in a tape medium passing between a take-up reel coupled to the take-up reel motor and a supply reel coupled to the supply reel motor.

Claim 24 (new): The tape drive system of claim 23, further comprising:

an accelerometer for sensing an acceleration of the head assembly and for generating a acceleration signal representative of an acceleration experienced by the head assembly; and

a tension control module coupled to the pressure sensor and the accelerometer for receiving the pressure signal and the acceleration signal and generating a tension signal representative of a tension in the tape medium;

wherein the motor controller is coupled to the pressure sensor through the tension control module such that the motor controller controls the rotation of the take-up reel motor and the supply reel motor based upon the tension signal generated by the tension control module.